DOCUMENT RESUME

ED 152 953 UD 018 207

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TITLE A Description of Instructional Experiences Received by Title I and Non-Title I Students.
PUB DATE 17 Mar 78
NOTE 32p.; Paper presented at the American Educational Research Association Annual Meeting (Toronto, Canada, March 1978); Page 7 may not reproduce well due to reproduction quality of the original document; For related documents see UD 017 917, UD 017 938 and UD 017 958

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS *Comparative Analysis; *Compensatory Education Programs; Differences; *Educational Experience; *Educationally Disadvantaged; *Educational Quality; Elementary Education; *Elementary School Students; Instruction; Program Effectiveness; Program Evaluation
IDENTIFIERS *Elementary Secondary Education Act Title I; Instructional Time

ABSTRACT

The Wiley and Harnischfeger school effects model treats quantity of instruction as a predictor of school performance. Despite the importance of the model for the study of school and program effects, including the incremental effects (if any) of Title I and other compensatory efforts, very little information is available on its practical application. Further, with or without the benefit of the model, little is known about the amounts and kinds of instructional services students actually receive in today's schools, either through locally or State supported regular instructional programs or Federally supported Title I programs. The research described in this document provides information in both of these areas. It includes a brief description of an instrument designed to obtain quantity and quality of schooling data, presents descriptive information about the amounts and kinds of services which various types of students receive, and addresses the following questions: (1) What amounts and kinds of services are actually delivered in today's elementary schools? (2) To what extent and in what way(s) does classroom instruction received by Title I students differ from that received by other students? (3) Does the amount of noncompensatory instruction received by Title I students appear to be related to the amount of compensatory instruction received? and (4) Does the delivery of compensatory services to Title I students differ in terms of group size and type of instruction from the delivery of noncompensatory services to these same students? (Author/GC)

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ED152953

A DESCRIPTION OF INSTRUCTIONAL EXPERIENCES RECEIVED BY TITLE I AND NON-TITLE I STUDENTS

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March 17, 1978

Printed in U.S.A.

UD018207

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A DESCRIPTION OF INSTRUCTIONAL EXPERIENCES RECEIVED BY TITLE I AND NON-TITLE I STUDENTS

INTRODUCTION

During the past decade, a number of highly-publicized studies and reports have drawn the startling conclusion that schooling has little or no effect on student performance (Coleman et al., 1966; Mosteller and Moynihan, 1972; Jencks et al., 1972). Numerous evaluations of local ESEA Title I efforts and a variety of large scale studies of compensatory education programs have likewise produced generally negative or "no effect" findings (Mosbaek, 1969; Wargo et al., 1971; Smith and Bissell, 1971). Although it would be difficult to find any evidence that the Coleman Report, for example, directly affected local decisions about school resource allocation, or that ESEA Title I evaluations, for example, have had any impact on particular program decisions in local schools or national bureaus, the findings of these studies have begun to erode the assumptions underlying compensatory policy (Cohen and Garet, 1975). They have also provided at least some of the ammunition for the back-to basics revolution which is currently spreading across the United States.

Despite these profound consequences, or perhaps because of them, a large number of the "no-effect school effects" studies have been shown to have serious technical and/or methodological flaws (e.g., Smith, 1972; Hauser, 1969). Recently, Wiley and Harnischfeger (1974) have gone beyond criticism of these studies and have produced an empirically verifiable model and a set of results which indicate that schooling does have an effect on student performance. They also argue that school effects have not been found in earlier studies because the wrong question has been addressed[1] and because critical measures of the amount or quantity of schooling have been treated as student characteristic variables rather than schooling variables thereby masking school effects (Wiley, 1973).

The Wiley and Harnischfeger school effects model, which is based in part on the work of Carroll (1963) and Bloom (1973), treats quantity of instruction as a predictor of school performance. In early statements of the model, quantity of instruction was defined and measured as a school level variable.[2] A more recent statement of the model (Harnischfeger and Wiley, 1977) treats quantity of instruction as a student level variable. It also distinguishes between the quantity or amount of instruction and the intensity of that instruction. Intensity is defined in terms of teacher/student contact (teacher, teacher plus aides, etc. available in the classroom) and size of the group in which a student receives instruction. Despite the importance of the model for the study of school and program effects, including the incremental effects (if any) of Title I and other compensatory efforts, very little information is currently available on its practical application.[3] Further, with or without the benefit of the model, surprisingly little is known about the amounts and kinds of instructional services students actually receive in today's schools, either through locally or state supported regular instructional programs or federally supported Title I programs. The research described herein provides information in both of these areas. It includes a brief description of an instrument designed to obtain quantity and quality of schooling data, presents descriptive information about the amounts and kinds of services which various types of students receive, and addresses four important questions:

1. What amounts and kinds of services are actually delivered in today's elementary schools.[4]
2. To what extent and in what way(s) does classroom instruction received by Title I students differ from that received by non-Title I students?
3. Does the amount of non-compensatory instruction received by Title I students appear to be related to the amount of compensatory instruction received?

4. Does the delivery of compensatory services to Title I students differ in terms of group size and type of instruction from the delivery of non-compensatory services to these same students?

Before turning to a discussion of our findings, it should be pointed out that this research was conducted as part of the ESEA Title I Demonstration Study conducted by Abt Associates Inc. for the National Institute of Education (NIE). Thirteen school districts which are cooperating with NIE and Abt Associates in this research have been allowed to modify regulations for the selection of schools and students to receive Title I services.[5] A portion of the Demonstration study involves describing and contrasting the instructional experience of Title I and non-Title I students in the participating districts. This paper describes a subset of these findings for the baseline year of this three year study.

PROCEDURES

Instrumentation

Quantity of schooling data, or as we have called it student experience data, were gathered using the Classroom Activities Log (CAL). This instrument, which was developed during the course of the Demonstration research, is designed to allow classroom teachers or other instructional providers (e.g., reading specialists or aides) to describe a student's experiences on a designated school day. It therefore provides data on the instruction actually provided to students rather than district level or administrator supplied data about the type of instruction that is supposed to be delivered.

A portion of the CAL instrument is reproduced in Figure 1.[6] As can be seen in the figure, the CAL provides quantity of schooling data (see the content area portion of the figure) as well as information on group size for instruction and the adult involved in that instruction, the two variables described by Wiley and Harnischfeger as measures of intensity of instruction. The CAL, which divides the school day into ten-minute intervals,[7] provides instructional information along five dimensions describing:

- the content or nature of the activity occurring during each ten-minute interval of the day (13 categories);
- whether or not that activity was compensatory (2 categories);
- whether or not the activity occurred in a language other than English (2 categories);
- the size of the group in which the sampled student participated in the activity (5 categories); and,
- the type of adult (if any) directly involved in the activity (9 categories).

Considering each category along each dimension as a possible separate treatment yields 2340 (13x2x2x5x9) possible "instructional experiences" which a child could have during every ten-minute interval

Figure 1

PART A

		7:00			8:00			9:00			10:00			11:00			12:00		
		:31—40	:41—50	:51—00	:01—10	:11—20	:21—30	:31—40	:41—50	:51—00	:01—10	:11—20	:21—30	:31—40	:41—50	:51—00	:01—10	:11—20	:21—30	:31—40	:41—50	:51—00
CONTENT AREA	1. Language Arts (including reading, writing, grammar, etc.)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	2. English as a Second Language (ESL)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	3. Mathematics	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	4. Social Studies	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	5. Science	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	6. Fine & Applied Arts; Home Economics; Shop; Foreign Language	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	7. Physical Education, Health, Safety	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	8. Career Education	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	9. Multi-cultural Enrichment	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	10. Special Services (If marked, code Section II)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	11. Recess, Lunch, Unoccupied	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	12. Classroom Management	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	13. Other (Specify) ____	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
COMPENSATORY INSTRUCTION AND SERVICES (If marked, code Section II)		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
BILINGUAL INSTRUCTION		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
GROUP SIZE	1. Just This Student	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	2. Small Group (2–5)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	3. Medium-sized Group (6–10)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	4. More Than 10 Students But Less Than 20 Students	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	5. 20 or More Students	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
ADULT INVOLVED DIRECTLY IN TEACHING STUDENTS	1. Homeroom Teacher	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	2. Another Classroom Teacher	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	3. Instructional Specialist	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	4. Student Teacher	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	5. Aide, Assistant, or Adult Tutor (Paid)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	6. Parent/Other Adult (Volunteer)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	7. Other Adult (Specify) ____	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	8. Older Student/Peer Tutor	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	9. No Adult Involved Directly (Student Working Independently Under Adult Supervision)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

of the day. Since many of these are relatively unimportant, a subset was selected for discussion here. In particular we focus on the following content categories:

- Language Arts - as defined by listening, library skills, speaking, grammar, reading, creative writing and penmanship skills, but excluding instruction in English-as-a-second language.
- Mathematics - defined as instruction in arithmetic operations, geometry, measurement, mathematical problem solving, set theory, concepts of time and space, and so forth.
- Other academic instruction - defined to include science and social studies.
- Non-academic instruction - defined to include fine arts, cultural enrichment, and physical education.
- Other - defined to include lunch and recess.[8]

Due to the relative infrequency of bilingual instruction in the participating districts, information on this type of school experience is not presented here. We do distinguish, however, between compensatory instruction and what we have called "regular" instruction. Compensatory instruction refers to supplemental instruction or services provided for economically poor and/or low achieving children. Supplemental means different from, or in addition to, the usual instruction or services provided to the average child. Regular instruction refers to all non-compensatory instruction and is generally associated with instruction paid for by the local school district. Due to the infrequent occurrence of compensatory instruction in other content areas, only language arts compensatory instruction is discussed.

With regard to measures of intensity (or quality) of instruction, data are presented for both group size and teacher type. As noted above, group size refers to the size of the group in which the sampled student engaged in the activity described in the content

area dimension. For purposes of this presentation the five group size categories shown in Figure 1 were collapsed as follows:

- Individual - Instruction delivered to designated student alone (student works on assignment alone).
- Small - Instruction takes place in a group of 2-5 students.
- Medium - Instruction takes place in a group of 6-20 students.
- Large - Instruction takes place in groups of more than 20 students.

Teacher type refers to the type of adult (if any) directly involved in an activity. For purposes of this presentation, the nine teacher type categories portrayed in Figure 1 collapsed as follows:

- Professional - defined as a homeroom teacher, or another classroom teacher.
- Instructional Specialist - defined as someone designated by the district as a specialist in a particular content area and not a regular classroom teacher.
- Paraprofessional - defined as a student teacher, paid aide or assistant, parent volunteer, other adult or older student.
- No adult involved directly - defined to include instances in which the designated student is engaged in a self-directed activity with no direct adult involvement. The adult is directly involved with another student or group, or is occupied in instructional planning.

Because of the novelty of the CAL, pains were taken to determine if teachers could reliably describe a student's school day using this instrument. To estimate reliability, trained observers employed by Abt Associates as research coordinators in each of the districts completed a CAL by following a predetermined child throughout a school day. The CAL's filled out by these observers were then compared with those completed by the child's classroom teacher. Using percent agreement as a measure of reliability, the amount of

correspondence between the pairs of scores was found to be on the order of 80% for each of the dimensions of the CAL.

Sample Selection and Data Collection

Because the Demonstration study was designed to compare, among other things, the types of instruction received by Title I and non-Title I students from different types of schools, a two-stage cluster sample was designed in which:

- schools were sampled from school types within each of the districts; and
- children were sampled from the stratified population of each third and fourth grade in the sampled schools.

School types were defined in terms of the presence and absence of Title I funds in the school prior to and during the Demonstration.[9] M schools were sampled at random from among the N schools of a given type within a district so that the sample mean of any variable to be compared would be 95% certain to deviate by no more than $\pm d$ units from the population mean that it estimates, where $d=2s\sqrt{\frac{N-M}{NM}}$ (approximately) and s is the population standard deviation of the variable.

Within sampled schools information was obtained on every classroom group in grades three and four. Given project resources, sampling from among the elementary grades was necessary. For a number of technical reasons relating to the generalizability of results, grades three and four were selected for study. Sampling all classrooms within grades guaranteed that we would know about any important variation from classroom to classroom resulting from homogeneous classroom grouping patterns.

CAL data were collected on two randomly selected students per classroom on each of two randomly selected observation days. Based on the results of pilot studies, this seemed to be the maximum burden for teachers to bear. One Title I and one non-Title I student was selected from each classroom group that included both

types of children. From classes with all or no Title I children, two children were selected at random. These students were drawn from classroom rosters supplied by teachers.

To enable comparisons of regular and compensatory instruction for Title I students, only those Title I students who actually received Title I language arts instruction on the observation days are included in this analysis. The student sample sizes resulting from this sampling plan are displayed in Table 1 by district and by type of student (Title I or non-Title I). Within the constraints of the sampling plan, these sample sizes reflect the size of the Title I efforts in the three sites. The reader is cautioned to take small sample sizes into account when interpreting results for Title I students in Adams County #12, Berkeley County, and Newport.

Analytic Techniques

The analytic techniques employed in this study were simple. All data presented in tables were derived from the CAL by summing the amount of time each sampled student spent in each type of activity for the day. Since each student was measured twice, the two observations were averaged to yield an estimate of the daily amount of time spent in each type of activity for each student. Site averages were then calculated for Title I and non-Title I students, and percentages calculated when called for.

While tests of significance were conducted in the course of comparing the amounts of instruction received by Title I and non-Title I students, in many cases rather small differences were found to be statistically significant and, because of small sample sizes, other large and more practically meaningful differences were not. Since the primary objective of this paper is to examine trends in experiences of various types of students across districts, we have not restricted ourselves here solely to discussions of statistically significant findings. Rather, using all results available to us, we search for patterns of differences which are consistent and across districts.

TABLE 1

SAMPLE SIZES BY DISTRICT AND STUDENT TYPE

DISTRICT	STUDENT TYPE		
	TITLE I	NON-TITLE I	TOTAL
Adams County #12, Colorado	8	104	112
Alum Rock, California	14	92	106
Berkeley County West Virginia	9	74	83
Boston, Massachusetts	46	233	279
Charlotte, North Carolina	95	374	469
Harrison County, West Virginia	34	86	120
Houston, Texas	54	754	808
Mesa, Arizona	26	124	150
Newport, Rhode Island	2	41	43
Racine, Wisconsin	28	160	188
Santa Fe, New Mexico	24	94	118
Winston-Salem, North Carolina	52	272	324
Yonkers, New York	18	112	130
TOTAL	410	2,520	2,930

RESULTS

Having described the CAL, we now turn to the second part of this paper: A description of the instructional experiences of third and fourth grade Title I and non-Title I students as reported by the teachers who actually provided the experiences.

Given the surprising paucity of data about the actual instructional experiences of elementary school children, the quantity and intensity of the instruction data to be described here are of interest in their own right. Since data on the actual experiences of Title I students are even more scarce,[10] a comparison of the instructional expereinces of Title I and non-Title I students is important, particularly for those engaged in Title I administration, instruction or research. Since the largest amount of Title I resources are allocated to language arts instruction, quantity and intensity of schooling in this content area will be emphasized.

The total amount of time a student spends in school each day is perhaps the most basic measure of his/her instructional experiences. Table 2 presents average school day figures for Title I and non-Title I students in each of the Demonstration districts. As can be seen in the table, the length of the average school day ranges from 322 minutes to 410 minutes for non-Title I students and from 310 to 405 minutes for Title I studies.

The length of the average "instructional day" is also given in Table 2. This measure was computed by subtracting the amount of time spent by each student in lunch and recess from the length of the school day, and therefore gives an indication of the total amount of time "available for organized instruction." As can be seen in the table, the length of the instructional day ranges from 232 to 326 minutes for non-Title I students and from 238 to 330 minutes for Title I students.

Several interesting points can be made about these school and instructional day data. First, the lengths of the school days and instructional days vary across school districts. Second,

TABLE 2

AVERAGE LENGTH (IN MINUTES PER DAY) OF THE SCHOOL DAY AND INSTRUCTIONAL DAY* BY STUDENT TYPE FOR THE 13 DEMONSTRATION DISTRICTS

DISTRICT	DAY LENGTH IN MINUTES			
	TITLE I STUDENTS		NON-TITLE I STUDENTS	
	SCHOOL DAY	INSTRUCTIONAL DAY	SCHOOL DAY	INSTRUCTIONAL DAY
Adams County #12, Colorado	360	267	370	268
Alum Rock, California	310	251	322	232
Berkeley County, West Virginia	378	281	410	290
Boston, Massachusetts	339	238	334	235
Charlotte, North Carolina	355	273	354	264
Harrison County, West Virginia	403	285	400	282
Houston, Texas	390	330	394	326
Mesa, Arizona	365	265	369	265
Newport, Rhode Island	355	267	363	275
Racine, Wisconsin	390	303	397	290
Santa Fe, New Mexico	405	278	392	263
Winston-Salem, North Carolina	363	282	366	282
Yonkers, New York	391	252	386	258

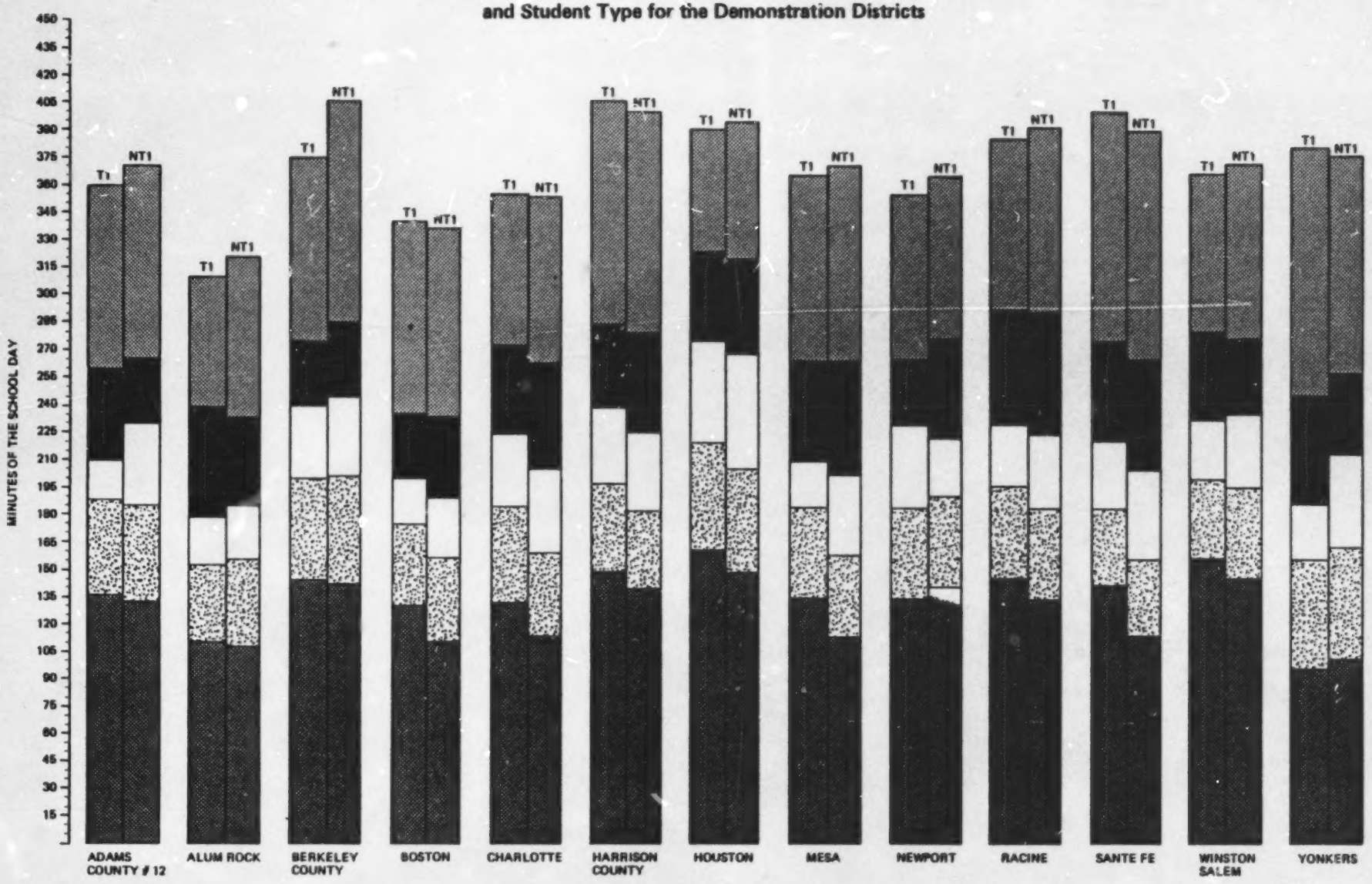
*Instructional day refers to the school day minus lunch and recess. This measure provides an indication of the total amount of time "available for organized instruction" within each district.

schools with longer school days do not necessarily have longer instructional days. Third, if we assume that quantity of schooling is positively related to student performance, longer instructional days, but not necessarily longer school days, will increase the probability of gains in student performance.

It should be noted that variation does exist within districts in the length of the school and instructional days for Title I and non-Title I students. With two exceptions these differences are minor and may be attributed to errors of measurement. Large differences, such as those in Adams County #12 and Berkeley County, may be attributable to both measurement error and to peculiarities of the particular days investigated for the small numbers of students "observed" in these sites.

Data on the actual amount of time that students receive instruction in various content areas are presented in Figure 2. For ease of presentation five content groupings, defined in the figure, are discussed. On the average, Title I and non-Title I students in each district spent about one-third of their school day in language arts instrctions (regular and compensatory), fifteen percent in mathematics (regular and compensatory), ten percent in other academic instruction (science and social studies), another fifteen percent in non-academic instruction, and the rest in lunch, recess and classroom management. This varies somewhat, but not dramatically, by school district with Houston, Newport and Winston-Salem emphasizing the basic skills more than others. These data show that large portions of the school day are spent in "non-instructional" activities. They also reveal that language arts is, as it should be, the most emphasized of the content areas. However, one might question whether language arts should be emphasized more than twice as much (on the average) as mathematics and more than three times as much as social studies and science combined. This question is particularly germane since one possible consequence of the "back-to-basics" movement is increased emphasis on language arts instruction.

Figure 2
Breakdown of the School Day by Instructional Content Area and Student Type for the Demonstration Districts



Given the amount of emphasis on language arts instruction, both for Title I and non-Title I students, additional information on this content area is presented in Table 3. Because of the small sample sizes for Title I students in Newport, data from only twelve sites are presented in this table.

Across all districts, Title I students were provided with an average of 33 minutes of compensatory language arts instruction per day. This contrasts with an average of two minutes of such instruction for non-Title I students. Whereas Title I students received more compensatory language arts instruction than non-Title I students in all twelve districts, they received less regular language arts instruction in eleven of the twelve sites. Combining regular and compensatory language arts, Title I students received more total language arts instruction than their non-Title I counterparts in 11 of the 12 districts.

Taken collectively, these data suggest that Title I students receiving compensatory language arts instruction are being deprived of a portion of the regular language arts instruction delivered to other students in the district. That this is occurring can be seen more clearly in Table 4, which describes the type of regular classroom instruction lost when compensatory services are delivered. Compensatory services, the large majority of which are accounted for by instruction in language arts, is provided at the expense of regular (or district supported) language arts instruction an average of 58% of the time. Instruction in mathematics, another important basic skill, is lost 14% of the time. Given a fixed-length school day, some instruction has to be lost when compensatory instruction is delivered. However, given that Title I services are intended to supplement and not supplant those provided by the district, it is indeed interesting that the basic skill areas of reading and mathematics are the "heavy losers."

To this point we have dealt exclusively with what Wiley and Harnischfeger call quantity of schooling and we have called

TABLE 3

AMOUNT OF REGULAR, COMPENSATORY AND TOTAL LANGUAGE ARTS INSTRUCTION IN MINUTES PER DAY RECEIVED BY TITLE I AND NON-TITLE I STUDENTS IN THE DEMONSTRATION DISTRICTS

DISTRICT	REGULAR LANGUAGE ARTS		COMPENSATORY LANGUAGE ARTS		TOTAL	
	TITLE I	NON-TITLE I	TITLE I	NON-TITLE I	TITLE I	NON-TITLE I
ADAMS COUNTY #12	109	119	28	1	137	120
ALUM ROCK	68	100	41	7	109	107
BERKELEY CO.	111	143	35	1	146	144
BOSTON	90	106	41	2	131	108
CHARLOTTE	97	110	35	1	132	111
HARRISON	120	130	28	1	148	131
HOUSTON	122	145	38	3	160	148
MESA	96	109	37	1	133	110
RACINE	112	129	34	2	146	131
SANTA FE	111	109	27	1	138	110
WINSTON-SALEM	112	137	41	2	153	139
YONKERS	67	109	31	2	98	111

TABLE 4

TYPE OF REGULAR CLASSROOM INSTRUCTION LOST
WHEN COMPENSATORY SERVICES WERE DELIVERED
FOR TITLE I STUDENTS BY DISTRICT

DISTRICT	TYPE OF REGULAR CLASSROOM INSTRUCTION LOST					
	BLANK OR NONE	LANGUAGE ARTS	MATHE-MATICS	SOCIAL STUDIES	SCIENCE	OTHER
	%	%	%	%	%	%
ADAMS CO. #12	21	21	0	7	36	14
ALUM ROCK	0	70	13	4	4	9
BERKELEY CO.	3	70	23	0	3	0
BOSTON	9	62	20	4	2	3
CHARLOTTE	10	53	12	8	5	12
HARRISON CO.	4	59	4	7	13	14
HOUSTON	7	55	18	4	8	8
MESA	3	57	34	1	3	3
RACINE	4	64	5	2	9	16
SANTA FE	2	75	8	4	6	6
WINSTON-SALEM	8	59	0	2	9	22
YONKERS	8	51	24	6	0	12
TOTAL	7	58	14	6	6	10

quantity of instruction data. However, intensity of instruction data, defined in terms of group size for instruction and type of teacher involved in that instruction, are also informative, particularly with regard to the instruction lost issue discussed above.

We turn now to a discussion of such intensity data. In this discussion we assume that smaller group sizes and instruction delivered by teachers trained specifically in a content area (e.g., language arts specialists) are preferred over large group instruction and instruction by regular classroom teachers.

Table 5 presents data on the size of the group in which Title I students received compensatory language arts instruction and Title I and non-Title I students received regular language arts instruction. Looking first at regular language arts instruction, it can be seen that for both Title I and non-Title I students the large majority of such instruction is delivered in medium and large groups. In fact, only in Alum Rock is more than 50% of the regular language arts instruction for either Title I or non-Title I students delivered in an individual or small group format. Given the recent trend toward more individualized instruction in all content areas, these results are somewhat surprising.

The results for compensatory instruction, on the other hand, reveal that in 9 of the 12 districts more than 50% of such instruction is delivered in an individual or small group format. Further, appreciably less of the compensatory than the regular language arts instruction is offered in large groups. Viewing group size as a measure of intensity (or quality) of instruction, these data indicate that compensatory language arts instruction delivered to Title I students differs in intensity (or quality) from the regular language arts instruction they receive.

Turning now to the second measure of intensity, type of teacher delivering instruction, differences between regular and compensatory language arts instruction are again found. The data supporting this general conclusion are presented in Table 6. As can be seen in this table, the large proportion of regular language

TABLE 5

PERCENTAGE OF TIME REGULAR AND COMPENSATORY LANGUAGE ARTS INSTRUCTION IS DELIVERED IN VARIOUS SIZED GROUPS FOR TITLE I AND NON-TITLE I STUDENTS IN THE DEMONSTRATION DISTRICTS*

DISTRICT	PERCENTAGE OF COMPENSATORY LANGUAGE ARTS TIME SPENT IN VARIOUS SIZE GROUPS			PERCENTAGE OF REGULAR LANGUAGE ARTS TIME SPENT IN VARIOUS SIZE GROUPS					
	TITLE I			TITLE I			NON-TITLE I		
	INDIVIDUAL	SMALL	MEDIUM	INDIVIDUAL	SMALL	MEDIUM	INDIVIDUAL	SMALL	MEDIUM
ADAMS COUNTY #12	7	30	62	22	13	30	13	9	27
ALUM ROCK	36	36	26	42	16	28	16	18	37
BERKELEY CO.	25	46	16	12	19	15	9	5	33
BOSTON	7	47	44	13	17	46	12	13	47
CHARLOTTE	16	51	34	13	16	39	16	7	35
HARRISON CO.	3	38	59	7	9	34	9	5	28
HOUSTON	6	26	63	7	11	35	7	5	38
MESA	7	90	3	13	16	19	19	9	19
RACINE	20	80	0	8	4	43	5	2	18
SANTA FE	10	73	16	18	25	39	14	16	35
WINSTON-SALEM	5	50	45	8	7	48	9	6	39
YONKERS	7	61	26	19	13	10	26	8	29

* The percentage of time spent in large group instruction is not portrayed in this table. Therefore, individual site totals and the sum of averages across sites may not equal 100%.

TABLE 6

PERCENTAGE OF TIME REGULAR AND COMPENSATORY LANGUAGE ARTS INSTRUCTION IS DELIVERED BY VARIOUS TEACHER TYPES FOR TITLE I AND NON-TITLE I STUDENTS IN THE DEMONSTRATION DISTRICTS*

DISTRICT	PERCENTAGE OF COMPENSATORY LANGUAGE ARTS			PERCENTAGE OF REGULAR LANGUAGE ARTS					
	TITLE I			TITLE I			NON-TITLE I		
	PROFESSIONAL	INSTRUCTIONAL SPECIALIST	PARA PROFESSIONAL	PROFESSIONAL	INSTRUCTIONAL SPECIALIST	PARA PROFESSIONAL	PROFESSIONAL	INSTRUCTIONAL SPECIALIST	PARA PROFESSIONAL
ADAMS COUNTY #12	0	83	10	65	0	2	72	1	3
ALUM ROCK	19	32	34	51	1	13	55	1	15
BERKELEY CO.	12	62	22	86	1	1	80	2	3
BOSTON	4	88	5	78	2	2	72	2	4
CHARLOTTE	0	87	10	74	6	5	72	4	3
HARRISON CO.	2	94	3	81	1	3	78	0	2
HOUSTON	6	86	6	84	1	3	80	2	1
MESA	1	22	77	75	2	4	67	2	3
RACINE	0	11	88	85	1	3	84	3	2
SANTA FE	5	82	14	62	2	12	69	1	9
WINSTON-SALEM	2	81	13	78	2	2	71	2	3
YONKERS	7	67	0	54	0	0	57	4	4

* The "No Adult Involved Directly" category is not included in this table

arts instruction is delivered by professionals (both homeroom teachers and other classroom teachers). In fact, across all districts more than 80% of the regular language arts instruction of Title I and non-Title I students is delivered by homeroom or other classroom teachers.[11] Further, in no instance were there appreciable within-district differences for Title I and non-Title I students.

The results for compensatory language arts are quite different from these. As can be seen in the table, in ten of the 12 districts less than 10% of the compensatory language arts instruction was delivered by homeroom or other classroom teachers. In nine of the districts more than 60% of this type of instruction was delivered by instructional specialists. Therefore, with regard to the teacher type measure of intensity, regular and compensatory language arts instruction delivered to Title I students must be viewed as qualitatively different.

Given these intensity of instruction findings, one could argue that the regular lnaguage arts instruction "lost" by Title I students (as discussed above) is being replaced or supplanted by compensatory instruction that is "qualitatively" superior. As a result, reductions in the quantity of regular language arts instruction of Title I students receiving compensatory language arts instruction cannot be interpreted as a loss.

Although this argument is appealing, the adoption of such a position may lead to some erroneous conclusions. For example, most Title I evaluations focusing on student outcomes assume, in one way or another, that Title I instruction is provided "over and above" the instruction received through the regular program. Without such an assumption, comparisons with "control" gorups of various kinds would not be advisable. However, if both quantity and intensity of instruction play a role in the determination of student performance, as argued by Wiley and Harnischfeger, it is quite possible that within some determinable bounds instruction of greater intensity is not able to compensate for large losses of less intense instruction. This would appear to be of primary concern in

those situations where the treatment and control group differences in total instruction (regular plus compensatory) are small. The data described here do not permit an empirical investigation of this hypothesis. They do lead one to wonder, however, whether the negative and no-effect findings in the literature may be explained at least in part by an instructional loss type of phenomenon.

SUMMARY

Two types of information have been provided in this paper. First, an instrument designed to obtain instructional experience data (i.e., quantity and intensity of schooling data) based on a model developed by Wiley and Harnischfeger has been described. This instrument, the Classroom Activities Log (CAL), provides teacher-supplied data on the duration of the instructional experiences of designated students along five dimensions: the content or nature of the instruction; whether or not the instruction is compensatory; whether or not the instruction is bilingual; the size of the group for instruction; and the type of adult (if any) directly involved in instruction.

The second type of information presented relates to the actual instructional experiences of Title I and non-Title I students. These data were obtained through the use of the CAL in 13 districts cooperating with the National Institute of Education and Abt Associates Inc. in the ESEA Title I Demonstration Study. Information has been provided on the quantity of instruction in a variety of content areas received by a sample of third and fourth grade students in these Demonstration districts. Information has also been provided on the intensity of language arts instruction, defined in terms of group size and type of teacher. A major conclusion reached is that Title I students appear to lose regular language arts instruction when they receive compensatory instruction. The consequences of this loss are discussed in terms of differences in the intensity of the two types of instruction and the possible implications for evaluations of Title I programs.

NOTES

1 Wiley and Harnischfeger argue that rather than asking if there are any effects of schooling, we should be asking how much of an effect schooling has.

2 In their preliminary work, Wiley and Harnischfeger (1974) defined quantity of schooling as the triple product of average daily attendance, the number of hours per day which the school meets, and the number of days in the school year.

3 Several studies employing the model are currently underway. See, for example, the small scale efforts of Berliner (1977) and Fisher, Filby and Marliave (1977) which report that amount of schooling positively effects student performance in reading and mathematics.

4 A distinction is made here between instruction which administrators plan to be delivered (and report as having been delivered) and instruction actually delivered by classroom teachers and received by students.

5 For a fuller description of this research see Vanecko, Archambault and Ames (1977).

6 For more information on the development and application of the CAL, including procedures for the selection of students, for sampling observation days and for aggregating data to the classroom level see Vanecko, Archambault and Ames (1977), and bault and Ames (1977). For procedures developed to train teachers to complete the CAL see Abt Associates Inc., (1977).

7 Instructions for the completion of the CAL include the following statement: "Ideally,...the CAL should be completed at 10-minute intervals throughout the observation day. SInce this is not always possible,it may be filled out at convenient intervals such as breaks, recess or lunch. (It) should not be completed before the observation day begins; it should be completed by the end of the observation day." (Abt Associates Inc., 1977, p. 4.).

8 See Abt Associates Inc., (1977) for complete definitions of each of these content areas.

9 For a complete description of the various school types and more detail on the sample design see Vanecko, Archambault and Ames (1977).

10 The scarcity of such data may be due in large part to the "black box" approach employed in the large majority of Table I evaluations. Those interested in an excellent discussion of the consequences of such an approach are referred to Charters and Jones (1973).

11 This figure was obtained by subtracting the sum of the instructional specialist and paraprofessional percentage from 100%.

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